

Abstract of the Disclosure

An object of the present invention is to provide an optical device that can restrain the dependence of the center wavelength of reflection at the diffraction grating upon the voltage applied to the piezoelectric element from shifting
5 depending on the temperature. An embodiment of the optical device has the following structure.

Optical device 1 has a U-shaped member 2, an optical fiber 4 having a diffraction grating portion 8 formed therein and a piezoelectric element (PZT based ceramics) 6. The U-shaped member 2 has a bottom portion 2a and a pair
10 of arm portions 2b and 2c extending from the bottom portion 2a. The U-shaped member consists of a material (aluminum alloy or the like) having a thermal expansion coefficient greater than the piezoelectric element 6. A voltage applying means 10 for applying a voltage is connected to the piezoelectric element 6, and the amount of displacement of the piezoelectric element 6
15 changes according to the magnitude of the applied voltage. The piezoelectric element 6 is in the form of a rod and is fixed to the U-shaped member 2 so as to be connected to the respective intermediate points of the arm portions 2b and 2c. The ends of the arm portions 2b and 2c of the U-shaped member 2 are fixed to the optical fiber 4 in such a manner as to stride the diffraction grating
20 portion 8 formed in the optical fiber.